

WHAT IS CLAIMED IS:

1. An information resource management device being provided in associated with a storage device and managing an information resource stored in the storage device, wherein a plurality of said storage devices and a plurality of said information resource management devices are connected with a network, said information resource management device comprising:

5 a storage information management unit for managing storage information that indicate which storage device stores said information resource in associated with identification information assigned based on identity of content of said information
10 resource;

15 a sending unit for sending said information resource back to another information resource management device connected with said network, said information resource corresponding to said identification information in an access request sent by said another information resource management device;

20 an access history storage unit for storing at least information for identifying said another information resource management device and an access history for said access including said identification information; and

25 a storage processing unit for performing a predetermined process that stores said information resource into a storage device controlled by said another information resource management device, said predetermined process being performed under a predetermined condition that is determined based on said access history.

2. An information resource management device according to claim 1, wherein said predetermined process includes migration or replication of said information resource.

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3. An information resource management device according to claim 1, wherein said predetermined condition includes a condition that the frequency of said access exceeds a predetermined value.

4. An information resource management device according to claim 1, wherein
an access request reception unit further receives user information for identifying
a user who has sent access request for said information resource via said another
information resource management device,

5 said access history management unit manages an access history including said
user information, and

 said storage processing unit performs said predetermined process in response
to a change of information resource management device used by said user.

10 5. An access history management device for integrally managing an entire access
history for an information resource, said access history management device being
connected with a same network as a plurality of storage devices for storing said
information resource and a plurality of information resource management devices for
managing a storage location of said information resource are connected with, wherein
15 said information resource management device maintains an access history for said
information resource stored in a pre-specified storage device, said access history
management device comprises:

 a collection unit for collecting said access history at a predetermined timing from
said plurality of information resource management devices, said access history
20 including at least information for identifying a sender information resource
management device that has sent an access request for said information resource
and identification information for identifying the information resource, said
identification information being assigned based on identity of content of said
information resource; and

25 an instruction sending unit for sending a change instruction to said information
resource management device based on said access history, said change instruction
being intended to change storage devices to store said information resource therein.

6. An access history management device according to claim 5, wherein said predetermined timing includes timing at predetermined intervals set in advance.

7. An access history management device according to claim 5, wherein said predetermined timing includes an arbitrary timing depending on said information resource management device.

8. An access history management device according to claim 5, wherein said collection unit further collects user information for identifying a user who has sent an access request for said information resource as a part of said access history,

10 said instruction sending unit further sends a change instruction to change storage devices at a time to store a plurality of information resources having accessed by a same user.

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9. An access history management device according to claim 5, wherein said change instruction sent by said instruction sending unit further includes information for identifying an information resource management device controlling said storage device having stored said information resource before the change.

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10. An access history management device according to claim 9, wherein said storage device before the change has the shortest network distance from said storage device after the change.

25 11. A computer system including a plurality of storage devices for storing an information resource and a plurality of information resource management devices for managing said information resource among said plurality of storage devices connected with a network, wherein

a first information resource management device is provided in associated with a storage device and stores an access history for said information resource stored in the storage device,

5 said first information resource management device sends said information resource to a second information resource management device under a predetermined condition that is set based on said access history, and

10 said second information resource management device receives said information resource sent from said first information resource management device and then stores said information resource into a storage device pre-specified to be under the control of said second information resource management device.

12. A computer system including a plurality of storage devices for storing an information resource, a plurality of information resource management devices for managing said information resource among said plurality of storage devices, and an 15 access history management device for managing an access history for all information resources connected with a network, wherein

each information resource management device maintains an access history for said information resource stored in a storage device pre-specified among said plurality of storage devices,

20 said access history management device collects said access history from said each information resource management device,

25 said access history management device sends a change instruction to said information resource management device based on the access history, said change instruction being intended to change storage devices to store said information resource therein, and

said information resource management device having received said change instruction changes storage devices to store said information resource.

13. A method of managing an information resource by means of an information resource management device being provided in associated with a storage device and managing said information resource stored in the storage device, wherein a plurality of said storage devices and a plurality of said information resource management devices are connected with a network, said method comprising steps of:

5 (a) managing storage information that indicate which storage device stores said information resource in associated with identification information assigned based on identity of content of said information resource;

10 (b) sending said information resource back to another information resource management device connected with said network, said information resource corresponding to said identification information in an access request sent by said another information resource management device;

15 (c) storing at least information for identifying said another information resource management device and an access history for said access including said identification information; and

20 (d) performing a predetermined process that stores said information resource into a storage device controlled by said another information resource management device, said predetermined process being performed under a predetermined condition that is determined based on said access history.

25 14. A method of managing an information resource based on an entire access history for said information resource stored in a plurality of storage devices, wherein a plurality of information resource management devices for managing a storage device to store said information resource maintain an access history for said information resources stored in a pre-specified storage device, said method comprising steps of:

20 (a) collecting said access history at a predetermined timing from said plurality of information resource management devices, said access history including at least information for identifying a sender information resource management device that has sent an access request for said information resource and identification information for

identifying the information resource, said identification information being assigned based on identity of content of said information resource; and

5 (b) sending a change instruction to said information resource management device based on said access history, said change instruction being intended to change storage devices to store said information resource.

15. A method of managing an information resource in a computer system including a plurality of storage devices for storing said information resource and a plurality of information resource management devices for managing said information resource

10 among said plurality of storage devices connected with a network, the method comprising steps of:

(a) causing a first information resource management device to store an access history for said information resource stored in a pre-specified storage device,

15 (b) causing said first information resource management device to send said information resource to a second information resource management device under a predetermined condition that is set based on said access history, and

(c) causing said second information resource management device to receive said information resource sent from said first information resource management device and then store said information resource into a storage device pre-specified to 20 be under the control of said second information resource management device.

16. A method of managing an information resource in a computer system including a plurality of storage devices for storing said information resource, a plurality of information resource management devices for managing said information resource

25 among said plurality of storage devices, and an access history management device for managing an access history for all information resources connected with a network, said method comprising steps of:

(a) causing each information resource management device to maintain an access history for said information resource stored in a storage device pre-specified

among said plurality of storage devices;

5 (b) causing said access history management device to collect said access history from said each information resource management device;

(c) sending a change instruction to said information resource management

device based on the access history, said change instruction being intended to change storage devices to store said information resource therein, and

10 (d) causing said information resource management device having received said change instruction to change storage devices to store said information resource therein.

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17. A computer readable medium in which a computer program is recorded, the computer program for causing a computer to manage an information resource by means of an information resource management device being provided in associated with a storage device and managing said information resource stored in the storage 20 device, said computer program causing said computer to implement functions of:

managing storage information that indicate which storage device stores said information resource in associated with identification information assigned based on identity of content of said information resource;

25 sending said information resource back to another device connected with said network, said information resource corresponding to said identification information in an access request sent by said another device;

storing at least information for identifying said another device and an access history for said access including said identification information; and

20 performing a predetermined process that stores said information resource into a storage device controlled by said another device, said predetermined process being performed under a predetermined condition that is determined based on said access history.

18. A computer readable medium in which a computer program is recorded, the computer program for causing a computer to manage an information resource based on an entire access history for said information resource stored in a plurality of storage devices, wherein a plurality of information resource management devices for managing a storage device to store said information resource maintain an access history for said information resource stored in a pre-specified storage device, said computer program causing said computer to implement functions of:

5 collecting said access history at a predetermined timing from said plurality of information resource management devices, said access history including at least
10 information for identifying a sender information resource management device that has sent an access request for said information resource and identification information for identifying the information resource, said identification information being assigned based on identity of content of said information resource; and

15 sending a change instruction to said information resource management device based on said access history, said change instruction being intended to change storage devices to store said information resource therein.